

## Transistors

**2SA2028**

Silicon PNP epitaxial planar type

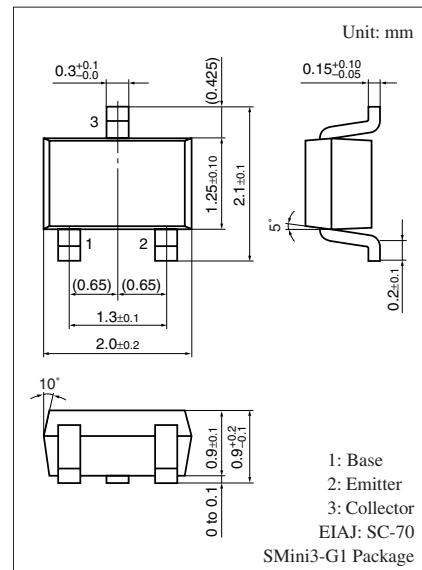
For DC-DC converter

**■ Features**

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- High-speed switching
- S-Mini type package, allowing downsizing and thinning of the equipment and automatic insertion through the tape packing

**■ Absolute Maximum Ratings**  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	-20	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-20	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-5	V
Collector current	$I_C$	-1	A
Peak collector current	$I_{CP}$	-3	A
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +125	$^\circ\text{C}$



Marking Symbol: AT

**■ Electrical Characteristics**  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$ 

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = -10 \mu\text{A}, I_E = 0$	-20			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -1 \text{ mA}, I_B = 0$	-20			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \mu\text{A}, I_C = 0$	-5			V
Forward current transfer ratio	$h_{FE}$	$V_{CE} = -2 \text{ V}, I_C = -100 \text{ mA}$	160		560	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -200 \text{ mA}, I_B = -10 \text{ mA}$		-40	-100	mV
Transition frequency	$f_T$	$V_{CB} = -10 \text{ V}, I_E = 10 \text{ mA}, f = 200 \text{ MHz}$		170		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		20	30	pF

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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